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Notes on the Herpetological Fauna of the Mexican State of Sonora

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ABSTRACT: The report is based largely upon a collection of reptiles and amphibians, now at the University of Kansas, secured by Edward H. Taylor in Sonora during parts of the summer of 1934. An ecological classification is given of the species discussed (five of amphibians, eighteen of lizards, sixteen of snakes, and two of turtles). *Cnemidophorus burti* sp. nov. is described from La Posa, near Guaymas. An annotated bibliography of literature concerning the herpetological fauna of the state is appended.

THE fauna of Sonora is of special interest to students of American herpetology, because of the proximity of this region to the states of Arizona and New Mexico, and the fact that the southern boundary of the state is not far from the southern limit of distribution of the species characteristic of the Sonoran faunal region, at least of those forms that are adapted to a lowland habitat. At Mazatlán in southern Sinaloa, this fauna has been largely replaced by other species, a large number of which show strong Central American affinities.

Although much of the state has not been explored herpetologically, a few collections have been made, chiefly in the coastal region about Guaymas and along the highway between Nogales and Guaymas.

A few specimens were obtained by members of the Mexican Boundary Commission between the years 1852 and 1854, and it appears that certain of the "Sonora" localities were incorporated in Arizona and New Mexico after the Gadsden Purchase. Specimens from the commission are in the National Museum. Prof. J. T. Lovewell and Mr. Heiligbrodt collected in Sonora at a much later date. This collection, which was presented to Washburn College, Topeka, Kan., was made the basis of a special report by Cragin (1884). A collection made by Dr. Gustav Eisen and Walter Bryant in April and May, 1892, is in the California Academy of Sciences. It was the subject of a report by Van Denburgh (1897).

Certainly the most important collection made prior to my own is one made by Morrow J. Allen, Jean Piatt and John Scofield, sponsored by the Museum of Zoölogy, University of Michigan. The collection numbered 326 specimens, 59 amphibians and 267 reptiles, and was obtained chiefly at Puerto, Noria, Hermosillo and Guaymas in June and July, 1932. Allen (1933) has published data on this collection, listing four amphibians, twelve lizards, six snakes (the report on the two species of rattlesnakes is accredited to H. K. Gloyd) and one turtle.

I spent the time between June 19 and July 16, 1934, in Sonora studying the herpetological fauna. A considerable collection was made, chiefly in the localities previously visited by Allen, Piatt, and Scofield. A brief itinerary from my diary follows:

June 19. Entered Sonora at Nogales. Collected a few specimens along the road, and made a late afternoon camp, 53 miles south of Nogales.

June 20 and 21. Collected along the road, and camped at Noria, the evening of the 20th. On both nights some time was spent in the field collecting with a light.

June 22. A stop was made 30 miles south of Noria, and later I pitched camp about five miles southwest of Hermosillo, in a large boulder field near low mountains.

June 23 to 25. Collected at Hermosillo, spending a part of each night in the field. I broke camp the afternoon of the 25th and made a camp 51 miles south of Hermosillo, remaining there until noon of the following day.

June 26. Spent the morning afield, then drove to Guaymas. During the evening I collected near the beach at Miramar, a small resort three miles northwest of Guaymas.

June 27. Collected about Miramar and later made camp at LaPosa, about ten miles northwest of Guaymas. This place consists of three small houses and a nearby well, situated within a quarter mile of the beach.

June 28 to July 16. With the La Posa camp as a base, collecting was carried on within a five-mile radius. Several hours were spent collecting in the field with a light on most of the nights. In the immediate vicinity of La Posa are a few low mountains rising from sea level. To the north about one and one half miles there is a chain of low mountains, and two miles to the west are other low peaks in the vicinity of San Carlos Bay. The intervening terrain is gravelly and covered with sparse bush and cacti, with occasional

stunted trees. At this season the country was arid and none of the small streams carried any water. With the aid of friendly vaqueros of La Posa two small springs were located about two miles to the north of my camp. Here a few hylas and the ubiquitous *Rana pipiens* were found by the springs; elsewhere only a single amphibian was taken, this, a large *Bufo alvarius,* obtained at the La Posa well, at night.

During the period I spent at this camp, a few specimens were also collected at Miramar and along the road to Guaymas. Two trips (one during the day, one at night) were made to Empalme, ten miles southeast of Guaymas.

On June 16 I journeyed south into Sinaloa, and later into Nayarit to continue collecting. On my return to the north, I spent a few days, August 4-8, in the general vicinity of Guaymas (Miramar and La Posa). A few specimens were taken along the highway on the return to the border. I arrived at Nogales August 10.

In the general region about Guaymas the mountains come down to the sea, but at various points there are flat, sandy beaches limited by a dyke of sand built up by the waves. The line where this dyke and the shrub met was an especially fine locality for collecting. This terrain offered shelter for numerous rodents, insuring a constant food supply for the snakes.

An ecological classification would include four general habitats where collecting was done: beach line; low gravelly flats; low mountains; and springs. The fauna of each is recorded below.

BEACH LINE

Callisaurus inusitatus
Heloderma suspectum
Masticophis flagellum frenatum
Phyllorhynchus decurtatus decurtatus
Crotalus cinereous

SPRINGS

Hyla arenicolor
Rana pipiens
Thamnophis eques
Ficimia desertorum (accidental)

LOW MOUNTAINS

Phyllodactylus homolepidurus
Sauromaulus hispidus
Ctenosaura hemilopha
Uta taylori
Cnemidophorus burti
Constrictor constrictor imperator
Masticophis piceus
Crotalus molossus molossus
Crotalus tigris
Gopherus agassizii

LOW BRUSHY FLATS

Coleonyx variegatus
Dipso-saurus dorsalis sonoriensis
Holbrookia elegans thermophila
Uta ornata lateralis
Uta stansburiana stejnegeri
Sceloporus clarkii clarkii
Sceloporus magister magister
Phrynosoma solare
Cnemidophorus melanostethus
Constrictor constrictor imperator
Hypsiglena ochrorynchus
Masticophis flagellum frenatum
Thamnophis eques
Trimorphodon lambda
Tantilla hobartsmithi
Crotalus cinereous
Kinosternon sonoriense
Bufo punctatus
Bufo alvarius
Scaphiopus couchii

AMPHIBIANS

The amphibian collection makes no claim to completeness. Most of the time spent in Sonora was prior to the advent of summer rains, when much of the amphibian population was still in aestivation.

On my return to the United States in August I obtained a few amphibians in Guaymas and at Noria. In the latter locality I failed to find *Pternohyla fodiens* Boulenger and *Microhyla olivacea* (Hallowell), species which Allen (1933) found to be plentiful. *Bufo woodhousii* Girard and *Bufo marinus* (Linnaeus) have been reported by Kellogg (1932). The record for *Bufo compactilis* Wiegmann from this locality may be regarded as doubtful.

Scaphiopus couchii Baird

A single specimen (No. 1151) was captured late at night on dry sand near Noria. It appeared to have been attracted by my lantern light, and approached close to my camp. Four were taken near Guaymas on a flat during a light rain.

Bufo alvarius Girard

One specimen (No. 14) was taken at night at La Posa, ten miles northwest of Guaymas. Four typical, immature specimens (Nos. 1102-1105) were collected on the night of August 4, on a barren flat four miles north of Guaymas.

Bufo punctatus Baird and Girard

One specimen (No. 132) was captured with the four above-mentioned *alvarius*.

Hyla arenicolor Cope

A series of eleven specimens (Nos. 368-378) was obtained from the immediate vicinity of a spring, about two miles north of La Posa. Here there is a sudden break in the low range, and within the cleft is a small basin where numerous palm and fig trees grow luxuriantly. The frogs emerged at twilight from among the dead palm leaves, which hung suspended about the trunk of the palms, and approached the pools below the spring. Here they were captured as they sat in the edge of the water or on the banks. All appear to be half grown. They are marked with very distinct rounded spots on a lighter, grayish ground color.

Rana pipiens Schreber

Five recently transformed specimens (Nos. 379-383) were encountered in the same pools mentioned above. A few tadpoles, not yet transformed, were seen in the pools.

LIZARDS

Phyllodactylus homolepidurus Smith

Phyllodactylus homolepidurus Smith, Univ. Kansas Sci. Bull., XXII, Apr. 15, 1935, pp. 121-125, pl. XXV, fig. 2a and text fig. 1, A.

A series of twenty-six was collected at the following localities: twelve (including the type), five miles southwest of Hermosillo; eleven, from a point ten miles northwest of Guaymas; three, four miles southeast of Guaymas on the Empalme road. Smith (*loc. cit.*) has given a thorough account of these specimens.

Coleonyx variegatus (Baird)

Stenodactylus variegatus Baird, Proc. Acad. Nat. Sci., Phila., 1858, p. 254 (type description; type locality, Rio Grande and Gila Valleys).

Coleonyx variegatus Smith, Trans. Kansas Acad. Sci., XXXVI, 1933, pp. 301-314.

Thirty-eight specimens of *Coleonyx variegatus* (Baird) were collected in Sonora, and with one exception, in which the specimen was found hidden under a rock, they were discovered at night running about over gravelly soil near the beach and in the mountains.

These specimens agree with the characters noted by Smith (*loc. cit.*) as being diagnostic of this species. The preanal pores vary from six to nine, and the supranasals are invariably in contact medially behind the rostral. The cloacal bones agree with those typical of *variegatus* save there is a suggestion of a groove or notch at the exposed end in certain specimens. In markings, a number of the specimens show a tendency for the transverse bars to break medially and a suggestion of a median dorsal line is often evident. The bars on the tail do not extend ventrally as is typical in many specimens of *brevis*. The breaking up of the juvenile color pattern seems to begin a little later in life than is typical, since only the largest specimens (snout to vent, 60 mm.) show this condition.

The specimens of this species usually run with the tail lifted, often curved over the back. The bright light from my lantern tended to bewilder them, and they were caught at night with little difficulty.

I obtained specimens from the following Sonoran localities:

Nos. 123-124, 152-153, 176-177, five miles southwest of Hermosillo, June 22 to 24; Nos. 260, 267, 293-295, 301, 327-333, 396, 436-437, 458, 461-462, 383, 385, La Posa, ten miles northwest of Guaymas, June 29 to July 16; 1142-1146, 1178-1182, near La Posa, Guaymas, August 5 to 7; 1183-1187, five miles southwest of Hermosillo, August 8 and 9.

Ctenosaura hemilopha (Cope)

Ctenosaura hemilopha Smith, Univ. Kansas Sci. Bull., XXII, No. 6, Apr. 15, 1935, pp. 140-142, pl. XXIII, fig. 1.

Two specimens were collected; one from a locality ten miles northwest of Guaymas is figured by Smith. The second specimen is from five miles southwest of Hermosillo. Smith has discussed these specimens (*loc. cit.*).

Dipso-saurus dorsalis sonoriensis Allen

Specimens were taken at Hermosillo and Guaymas as follows: Topotypes, Nos. 180, 180a, five miles southwest Hermosillo, June 25; Nos. 296, 341, 362a, 419, 463, and 494-497 (skeletons), between July 2 and 12 in the general region about Miramar and La Posa; 1128-1129, northwest of Guaymas, August 7; 1127-1128, 1148-1149, near Miramar, August 7 and 8.

These specimens agree with the details of the type description. The two or three scale rows between the nostril and rostral (as occurs in the typical subspecies) is reduced in this form to a single series. This appears to be constant. The brown reticulation on the throat enclosing round or oval cream areas, the less distinct rows of dark spots forming caudal annuli, and the tendency to lose the ocellated spots on the neck and shoulders, are all characters that tend to separate these from the more northern forms. The labials are fewer and smaller.

All the specimens come within the limits of variation assigned to the form by Allen.

Crotaphytus collaris baileyi Stejneger

One male specimen (No. 1162) was taken about sixty-one miles south of Nogales. The throat is lavender, becoming purplish posteriorly and covered with cream reticulations. The spots in the temporal region are a light chocolate brown; the neckbands are widely broken below; body with slate bands separated by only

slightly lighter interspaces, the whole covered with tiny light-cream spots; tail with indistinct brown bands. The hind leg brought forward, the tibiotarsal articulation reaches the shoulder, the longest toe to a point somewhat in advance of the eye. Ventral surface of limbs, abdomen and tail, cream-white.

Snout to vent, 98 mm.; tail, 188 mm.; hind leg, 85 mm.; femoral pores, 16-19.

Sauromaulus townsendi Dickerson

Sauromaulus townsendi Schmidt, Bull. Amer. Mus. Nat. Hist., XLVI, Dec. 7, 1922, p. 643; Belding, West Amer. Scientist, III, 1887, pp. 97-99.

I collected three specimens of this species: one (No. 198) fifty-four miles southwest of Hermosillo; one (No. 222) at Miramar, three miles northwest of Guaymas; and one (No. 346) five miles north of Guaymas. All were discovered in rock crevices from which localities they were removed with considerable difficulty.

These specimens have been identified with Dickerson's species on the basis of the character of the interauricular scales and the large size of the caudal scales. Schmidt (*loc. cit.*) has pointed out that the species is, in several respects, intermediate between *S. obesus* and *S. hispidus* but actually distinct from both.

Measurements (Nos. 198 and 222, respectively [in millimeters]): Snout to vent, 126, 155; tail, 140, 122 (regenerated); head length, 28, 32; head width, 26, 32; body width, from edges of lateral folds, 54, 62; foreleg, 52, 61; hind leg, 78, 88. The number of scales in a single whorl about the tail at widest part, 64, 62; scales from gular fold to anus, 153, 143.

Color. No. 198. Above, the specimen is yellowish-tan and brown, the darker color forming five, rather indefinite, broad bands across the body. The tail with five, unequal, broad, dark-colored bands and five lighter bands, the terminal band narrow. The dorsal surface is marked with small spots, those on the dark bands larger than those on the lighter interspaces. Below, the body is a dirty cream with some lavender marbling on the throat. The ventral surface of the thigh has brown, punctate spots. The edges of the gular fold and the preauricular lobules are cream. The head is brown above.

The larger specimen (No. 222) is darker above than the preceding specimen. The general pattern of dark bands with lighter interspaces can be discerned with difficulty. There is only a slight contrast between the light and dark bands on the tail. The sides of the body have numerous small brown spots.

Callisaurus inusitatus Dickerson

Callisaurus inusitatus Dickerson, Bull. Amer. Mus. Nat. Hist., XLI, 1919, p. 465; Allen, Occ. Papers Mus. Zoöl. U. of Mich., No. 259, Apr. 3, 1933, pp. 7-8.

The following specimens were collected: Nos. 51, 52, twenty-five miles south of Nogales, June 20; No. 60, fifty-three miles south of Nogales, June 20; Nos. 83, 84, near Noria, June 22; Nos. 131, 132, and 178, five miles southwest of Hermosillo, June 23; Nos. 186, 188, fifty-four miles southwest of Hermosillo, June 28; Nos. 207, 208, Miramar, near Guaymas, July 29; Nos. 283-286, 290, 339-340, 347, 363-364, 396, 399-407, 423, 452-459, 464, 465, 486, 487, 504-506, 521, La Posa, June 29 to July 10; Nos. 1111-1117, 1121-1126, 1150, 1188-1190, La Posa and Miramar, August 4 to 6.

If Linsdale* is correct in his surmise that there is but a single species of *Callisaurus* on the peninsula of Lower California and the western United States, the form here considered would be *Callisaurus draconoides inusitatus.* I lack sufficient comparative material to either concur in, or disprove, his conclusions.

Holbrookia elegans thermophila (Barbour)

Holbrookia elegans thermophila Smith, Univ. Kansas Sci. Bull. XXII, No. 8, Apr. 15, 1935, pp. 194-195, pl. XXVII, fig. 1; pl. XXVIII, fig. 4. (Also, pp. 191-193.)

Sixty-eight specimens were collected at various points in Sonora, as follows: Fifty-three miles south of Nogales, two specimens; two, eight miles south of Magdalena; five near Noria; one, thirty miles south of Noria; three, five miles southwest of Hermosillo; five, fifty-four miles south of Hermosillo; fifty, ten miles northwest of Guaymas.

Smith (*loc. cit.*) has discussed this lot, and has given a series of measurements.

Uta taylori Smith

Uta taylori Smith, Univ. Kansas Sci. Bull., XXII, Apr. 15, 1935, pp. 158-166, pl. XXVI, fig. 3.

Thirty-one specimens, including the type, were collected as follows: Nos. 252-258, June 30; 280-284, July 1; 300, 304, July 2; 320, 321, 322, 323a on July 3; 335, July 4; 393, July 6; 474, 474a, July 12; 500, July 13; all from La Posa, ten miles northwest of Guaymas. Nos. 199-202, fifty-four miles southwest of Hermosillo, June 26; Nos. 448-450, from a locality twelve miles northwest of Guaymas, July 10.

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* Linsdale, Amphibians and Reptiles from Lower California. Univ. Cal. Publ. Zoöl., XXXVIII, No. 6, June 24, 1932, pp. 357-359.

Uta stansburiana stejnegeri Schmidt

Uta stansburiana stejnegeri Smith, Univ. Kans. Sci. Bull., XXII, Apr. 15, 1935, pp. 166-167.

A series of seven (Nos. 501-503, 514-517a) from near Empalme. See Smith (*loc. cit*) for comments on these specimens.

Uta ornata lateralis (Boulenger)

Uta ornata lateralis Smith, Univ. Kansas Sci. Bull., XXII, April 15, 1935, p. 179.

Thirty-nine specimens were taken at the following localities: Eight miles south of Magdalena; thirty miles south of Noria; five miles southwest of Hermosillo; La Posa, ten miles northwest of Guaymas. Smith (*loc. cit.*) discusses this series.

Sceloporus clarkii clarkii Baird and Girard

Sceloporus clarkii Baird and Girard, Proc. Acad. Nat. Sci., Philadelphia, VI, Aug., 1852, p. 127. (Type description; type locality, "Province of Sonora." John H. Clark, collector.) (Not improbably from southern Arizona or southern New Mexico.)

This species was found to be present in most of the localities where I collected. In this region the species was encountered, almost without exception, in trees. In New Mexico, in certain localities, it becomes adapted to a rock habitat along deep arroyos. In eastern Arizona, *magister magister* also occurs and is the more terrestrial form, while *clarkii clarkii* is chiefly arboreal in habit.

It may be remarked that *magister magister* has a range from Nevada to Texas and southern Sonora—a range that includes the smaller range of *clarkii clarkii*. Nowhere is there any evidence of intergradation. Certain scale differences are constant and other differentiating characters of equal specific importance, suffice to enable each to maintain complete distinction from the other.

The following specimens were taken: Nos. 47-48, twenty-five miles south of Nogales, June 19; 54-57, about fifty-three miles south of Nogales, June 19; 65-68, Noria, June 20 (skeletonized); 74, thirty miles south of Noria, June 20; 105-106, thirty miles south of Noria, June 22 (skeletons); 116, 122, five miles southwest of Hermosillo, June 24; 182, fifty miles south of Hermosillo, June 24; 230, 306, 316-319, 336, 367, 386-391, 325-429, 429a, 429b, in the vicinity of La Posa, ten miles northwest of Guaymas, June 29, July 9; 524, Miramar, July 9; 1164, fifty miles south of Nogales, August 10.

Sceloporus magister magister Hallowell

Sceloporus magister Hallowell, Proc. Acad. Nat. Sci. Phila., VII, 1854, p. 93 (type description; type locality, Yuma, Ariz.).

Eight specimens were collected in Sonora, as follows: Nos. 81-82, near Noria, June 20, in a hole in a tree; 292, yg., La Posa, ten miles northwest of Guaymas, July 1; 408, July 7, La Posa; 420, La Posa, July 9 (skeleton); 466 and 466a, San Carlos Bay, July 12; 1152, La Posa, August 8.

This species† was usually encountered feeding in trees or on cactus. It appears to have burrows or at least takes refuge in burrows about the roots of plants. The stomachs were filled chiefly with flowers at this season.

One specimen (No. 420, skeletonized) contained nineteen well-developed eggs. The head and neck of the specimen was distinctly reddish in life.

Phrynosoma solare Gray

Specimens of this species were collected as follows: No. 179, southwest of Hermosillo, enroute to Guaymas, June 25; 259, ten miles northwest of Guaymas, July 8; 512, on the beach road near Empalme, July 13; 1110, in a street in Guaymas; 1156-1157, in the highway near Santa Ana, August 10.

All of these specimens, save one, were encountered in the mornings, along roads. A single one was taken under a low shrub, in partial shade, about 2:30 in the afternoon.

Compared with Arizona specimens from Tucson, the Sonoran specimens exhibit the same general color patterns. The horns surrounding the back of the head appear to be slightly longer in the males and the scales growing from the edge of the lateral skinfold (below the lateral spine series) are somewhat larger. All the specimens have the belly whitish or rusty white, with numerous, punctate, black spots.

Heloderma suspectum Cope

Three specimens of this species were collected at night near La Posa. Two (Nos. 263, 264) were captured in the sand near the point of meeting of the sandy beach and the shrub. (No. 264 has been skeletonized.) No. 205 was found on the top of the low mountain rising from the edge of the sea.

This last specimen was captured and placed in a sugar sack. On picking up my "snake stick" which had fallen near the sack, the

† More complete data on this form and *S. clarkii clarkii* will appear in a work by Hobart M. Smith treating of Mexican and American Sceloporı.

Heloderma made a quick lunge, and seized the third finger of my right hand, sinking the teeth to the bone. With a quick jerk, I tore my finger from the animal's mouth, thus widely opening the wounds. After sucking the wounds, the fingers were wrapped up and collecting continued. There was no ill effect, other than that which any wound of like extent would cause. No effects that could be attributed to venom could be observed.

Cnemidophorus melanostethus Cope

Cnemidophorus melanostethus Cope, Proc. Acad. Nat. Sci., Philadelphia, 1863, p. 104 (type description; type locality "Region of the Colorado of California," H. B. Möllhausen, collector).

Cnemidophorus tessellatus aethiops Cope, Ann. Rep. U. S. Nat. Mus., 1898 (1900), p. 582 (type description; type locality, Hermosillo, Son., Mex. Jenkins and Evermann, collectors).

Cnemidophorus tessellatus tessellatus Allen, Occ. Papers Mus. Zoöl. U. of Mich., No. 259, 1933, p. 10 (Puerto, Hermosillo, and Guaymas, Sonora).

I observed this species in 1934 at a number of localities along the highway between Nogales and Guaymas, in fact, it was one of the most common of Sonoran lizards. The following are in the collection: Nos. 91-95, 96, 96a, 99-100, June 21, near Noria; 114, thirty miles south of Noria, June 22; 133-136, 161-165, five miles southwest of Hermosillo, June 23-25; 220, 231-232, 232a-232b, 238, 270-271, 297, 313-315, near La Posa, ten miles northwest of Guaymas, June 28 to July 5; 358-362, near Miramar, three miles northwest of Guaymas, July 5; 404, 475-476a, 507-510a, July 14, near La Posa; 1118-1119, 1130-1134a, near Guaymas, August 5-7, 1934. Several other specimens have been skeletonized.

Cnemidophorus burti sp. nov.

(Plate XLII, fig.. 2.)

Holotype. No. 269, collected near La Posa, ten miles northwest of Guaymas, Sonora, July 4, 1934; E. H. Taylor, collector. Paratypes Nos. 239, 268, 311 (skeleton), 312, 392, 442, 443, all from the region about La Posa, collected from June 20 to July 10.

Diagnosis. Related to *C. perplexus*, but with a tendency toward a reversal of the typical color pattern. The young are five-lined; brownish or tan dots on a dark-brown background between much widened, bright, cream-colored, lateral lines, and between the dorsolateral and the broad, lavender, median lines. Most of the older specimens lose practically all trace of the dots and the pair of lateral lines on each side are strongly intensified, while the median becomes dim lavender to reddish in color. The ground color becomes dark or light reddish-brown.

Description of the type. Rostral typical, the part visible above longer than the nasal suture, but shorter than the frontonasal; frontal single, once and one fourth as long as broad; two frontoparietals, their greatest combined width equal to two thirds the combined width of the parietal series; three parietals, followed by a group of scales, the one bordering the outer lower edge of the outer parietals largest; four supraoculars, the anterior triangular and of about the same area as the last, the first three touching the frontal; last three supraoculars separated from superciliary series by a single row of small granular scales, and the third supraocular partially and the fourth wholly separated from the frontoparietals. Six-seven superciliary scales; eyelid with a row of seven small plates higher than long; enlarged upper labials 5-5; enlarged lower labials 7-8, the anterior much reduced.

Mental rounded, followed by a single undivided postmental; five pairs of chinshields (sublabials), only the first pair in contact, the last separated from the mouth angle by two pairs of moderately enlarged scales only partially in contact with the labials; postnasal large, much higher than wide, followed by a much larger loreal, and a very small scale segmented from the lower posterior corner of the loreal; two preoculars, each keeled along the upper, inner border; subocular elongate, with a low keel, followed by two postsuboculars; a series of enlarged temporals, continuous with the superciliaries, flanked above and below by somewhat smaller scales. Auricular opening large, D-shaped; enlarged anterior gular series extending across the ventral surface, separated from the first gular fold by fourteen rows of subequal scales; three rows of smaller scales in first fold; five rows of scales between the anterior and posterior folds, becoming much enlarged posteriorly; eleven rows of granular scales in the posterior fold.

Venter with six complete series and two outer incomplete series of much widened ventral scutes, the two median somewhat narrower than others; about thirty-six transverse rows from gular fold granules to the femoral pores. Upper arm with five, lower with three rows of enlarged scales (brachials and antebrachials) on front of arm; the postantebrachials distinctly enlarged; femoral pores, 18-19; tail elongate, tapering; scale rows around body, 98 (not including enlarged ventrals).

Color in life. Above blackish-brown with five longitudinal light stripes from head to groin or to base of tail; the dorsolateral and median lines extend onto the tail some distance; the light stripes are

distinctly more than half the width of the intervening dark stripe; the median light line forks on the neck and is lilac to lavender in color. The lateral stripes are cream anteriorly, becoming light lavender posteriorly. There is no trace of spots. Ventral surfaces cream, immaculate. Top of head uniform olive.

Measurements (in mm.) of holotype and paratypes of *Cnemidophorus burti*, sp. nov.

Number	268	442	392	312	269	443	239
Sex	♂	♂	♂	♀	♂	yg.	yg.
Snout to vent	85	85	85	80	78	68	64
Tail	240	.....	233	.....	235	197	183
Width of head, temporal	13.5	13.2	14	12	13	9	10
Length of head, rostral to back of parietals	17	19.5	19	17	19	15	14
Width of head, across eyelids	9	9	9	7.5	9	7	6.5
Snout to ear	19	19.5	19.8	18	18	16	14.5
Snout to foreleg	32	35	31	28	29.5	22	24
Axilla to groin	39	38	38	42	38	34	30
Foreleg	30	29	30	30	27	26	23.5
Hind leg	61	58	56	58	55	53	45

Variation. In color the youngest specimen (No. 239) shows a well-defined series of spots on the darker background between the light lines; these have practically disappeared in No. 443, which is a few millimeters larger. Otherwise, the color pattern is practically unvaried in the remainder of the series, save that the ground color tends towards a red-brown in most of the specimens.

Scale rows around the body vary between 93 and 99, the average being about 97.

Remarks. Burt (Bull. U. S. Nat. Mus., No. 154, 1931, p. 132) mentions a specimen of this form from near Guaymas, Sonora, under the name of *C. sexlineatus perplexus*, and Allen (Occ. Papers Mus. Zoöl., U. of Mich., No. 259, 1933, p. 10), likewise mentions one of this species from Guaymas. The coloration is, as suggested by Burt, strongly reminiscent of that of *hyperythrus*. The species is named for Dr. Charles Burt, who has made the genus *Cnemidophorus* his particular field of study.

Cnemidophorus perplexus Baird and Girard

Cnemidophorus perplexus Baird and Girard, Proc. Acad. Nat. Sci., Philadelphia, 1852, p. 128 (type description; type locality—Valley of the Rio San Pedro. Also collected by General Churchill, on the Rio Grande, west of San Antonio, Texas, and by Dr. William Gambel on his last journey to California).

The proper identity of numerous populations of Cnemidophorus in the southwestern part of the United States is, I believe, still in question. Burt (1931, Bull. U. S. Nat. Mus., No. 154) has the identification problem solved by placing most of the named forms in the synonymy of *sexlineatus perplexus* and *tessellatus tessellatus*.

Since the modern tendency in systematic taxonomy is the recognition by name of variant populations which cover a considerable range, it seems likely that certain of the names now in synonymy will of necessity be resurrected for such variant populations whose differential characters are not wholly due to differences in age or sex.

The species here considered as *Cnemidophorus perplexus* differs from western Texas (type locality) specimens in several characters, not the least important of which is a much larger number of scale rows around the middle of the body. A series of sixteen specimens from western Texas and southeastern New Mexico have a range from 64 to 72 scale rows around the middle of the body, the average being 68. The series from Hermosillo, in the central northern part of Sonora (Nos. 156-160, June 23-25, 1934; E. H. Taylor, collector), vary between 89 and 95, the average being about 92. The femoral pores are 16-19, the average being 18; this number appears seven times (in 12 femora counted), 19 twice, 17 twice, 16 once; a specimen (No. 189) taken fifty-four miles southwest of Hermosillo has 95 scale rows.

The series shows age transitions from a six-lined form to one with a series of twelve rows or rounded, light spots, largest on the sides, less distinct and smaller on the median dorsal region, those on the nuchal region obsolete. The specimen (No. 189) taken fifty-four miles southwest of Hermosillo has the two median lines tending toward a fusion in the middle of the back; they are separate posteriorly and are obscured by the brownish color in the neck region.

It is probable that this form should be recognized as a subspecies of *perplexus*. It seems that the young lack the bluish ventral and caudal coloration and there is an average difference in the adult color pattern. However, in general, these follow the expected individual evolution of the color pattern for *perplexus* (typical).

SNAKES

Lichanura roseofusca gracia Klauber

Lichanura roseofusca gracia Klauber, Trans. San Diego Soc. Nat. Hist., VI, No. 20, Apr. 30, 1931, pp. 305-318, pl. 21, fig. 1; and Copeia, No. 4, Dec. 27, 1933, pp. 214-215.

The report of a form of *Lichanura* (Klauber, 1933) at Guaymas, Sonora, anticipates the capture of my specimen from near Hermosillo, which lies about seventy-five miles north of Guaymas.

The specimen (No. 129) was captured June 29, 1934, just after daybreak in a mass of boulders five miles southwest of Hermosillo. It is a pregnant female with the embryos probably two thirds developed. No fear was shown at my approach and when picked up the snake remained quite docile. The embryos were removed when it was preserved. These are Nos. 166-169. They show the typical striped color pattern of the mother.

The measurements (in millimeters) and scale counts are as follows: Snout to vent, 546; tail, 62 (injured); ventrals, 223; subcaudals, 40; scale rows, neck 40, about body 43, in front of anus 25. The young measure about 160 to 172 in total length, the tails measuring about 25 mm.

Three of the young are males, with the hemipenes still completely extruded; one is a female; the latter has slightly shorter tail than the males. The following table shows the scale counts of these specimens:

No.	Sex	Ventrals	Subcaudals
166	♂	223	49
167	♂	220	47
168	♂	223	48
169	♀	227	48

Constrictor constrictor imperator (Daudin)

Constrictor constrictor imperator Allen, Occ. Papers. Mus. Zoöl., U. of Mich., No. 259, Apr. 3, 1933, p. 11 (Hermosillo).

Three specimens of this boa were taken in the neighborhood of La Posa. One was skeletonized, the other two were brought back to Lawrence, Kan., alive. All are typical.

One was found in the mouth of a small cave, in which was observed on several occasions the track of what appeared to be a very large specimen of this species. One specimen, a female, was captured in a tree cactus about five feet from the ground. A third was captured at night crawling along a dry arroyo.

The capture of this snake by Allen (1933) at Hermosillo suggests the possibility of its being eventually discovered in some of the mountain ranges of southern and southwestern Arizona.

Masticophis flagellum frenatum Stejneger

Masticophis flagellum frenatus Ortenburger, Mem. Univ. Mich. Mus., I, 1928, pp. 112-125, pls. XX, XXI.

A specimen collected in a low tree on the edge of the beach at La Posa is referred to *frenatus*. This specimen (No. 395) is uniform brown-olive, each scale showing a lighter area on the anterior median part. This lighter area becomes more distinct posteriorly. There is some evidence of spots on the labials, and the loreal and posterior nasal seem to be more yellow than the scales above and below. The anterior ventrals have a double row of median spots which are more evident anteriorly.

A second specimen (No. 513), captured near Empalme, is slightly darker than the preceding, but there is no trace of the dark bands. The dark, labial spots are dimly visible, while the anterior ventral and mental spots are quite distinct. The loreal line is dimly visible.

A third specimen (No. 1460) was collected near Santa Ana in northern Sonora. This young specimen has the typical coloration, but even in the young the transverse markings are not pronounced. The head markings are, however, typical of *frenatus*. The anterior ventral spotting is irregular, the spots being in about four rows.

A large specimen (No. 1137) of the "red" phase of this species was captured near Guaymas, and brought alive to Kansas University. At first the specimen was shy and timid, attempting to escape as one approached the cage, striking when a hand was placed in the cage. Later it became very tame, permitting itself to be force-fed on beef without resistance.

Measurements and Scale Counts of *Masticophis flagellum frenatum* Stejneger

No.	*Ventrals*	*Sub-caudals*	*Upper labials*	*Post-oculars*	*Scale formula*	*Total length*	*Tail length*
513	203	97	8-8	2-2	22, 17, 15, 13, 12	1810	450
395	201	110	8-8	2-2	22, 17, 17, 13, 12	1292	246
1160	196	99	8-8	2-2	21, 17, 17, 13, 12	935	242
1137	197	106	8-8	2-2		1760	415

Masticophis piceus (Cope)

Masticophis piceus Ortenburger, Mem. Univ. Mich. Mus. Zoöl., I, 1928, pp. 112-125, pls. XX, XXI; Allen, Occ. Papers Mus. Zoöl. Univ. Mich., No. 259, Apr. 3, 1933, p. 11. (Hermosillo).

Two specimens were captured in Sonora. The first (No. 113) was collected thirty miles south of Noria near the highway. It was dis-

covered extending its head from a woodpecker hole, in a tree, about thirty feet from the ground, and was shot. This specimen is of a deep, blue-black color, save that toward the tip of the tail the color becomes brownish-black. On the ventral surface on the posterior half of the body there is an infusion of brown, becoming lighter posteriorly. On the last fifth of the body there are a few yellow flecks. In the anal region these form larger yellow areas. The inner edges of the subcaudals are light colored. Two other specimens seen escaped into holes in a hollow branch of the same tree.

No. 379. The anterior half of the body is black. About the middle of body there are three black-spotted, reddish bands, while the latter third of the body is more or less reddish. The tail is uniformly reddish-brown. The specimen was captured in the heat of the day under a flat rock, near La Posa.

These specimens seem to be common in the trees along small ravines. At least eight specimens seen escaped into holes in the boles or branches.

Scale Counts and Measurements (in mm.) of *Masticophis piceus* (Cope)

No.	*Sex*	*Ventrals*	*Anal*	*Subcaudals*	*Upper labials*	*Lower labials*	*Preoculars*	*Scale formula*	*Total length*	*Tail length*
113	♂	205	2	96	8-8	9-9	2-2	19, 17, 16, 13, 12	1460*	383
479	♂	200	2	113	8-9	11-12	2-2	21, 17, 17, 12, 12	1468*	395

* Tip of tail missing.

Masticophis semilineatus (Cope)

Masticophis semilineatus Ortenburger, Mem. Univ. Mich. Mus., I, 1928, pp. 48-57, pls. XI, XII, XIII, and text figs. 6, 7, 8; Allen, Occ. Papers Mus. Zoöl. Univ. Mich., No. 259, April 3, 1933, p. 11 (Hermosillo).

Three specimens of this species were taken. No. 155 was captured five miles southwest of Hermosillo at night in a bush; Nos. 234 and 325 were taken in the morning, at La Posa. No. 425, taken in a deep canyon in the mountains near La Posa, has been skeletonized.

These specimens agree well with specimens described and figured by Ortenburger (*loc. cit.*) and the scale counts are well within the known range of variation.

Scale Counts and Measurements (in mm.) of *Masticophis semilineatus* (Cope)

No.	*Sex*	*Ventrals*	*Subcaudals*	*Upper labials*	*Lower labials*	*Scale rows*	*Total length*	*Tail length*
155†	?	...	...	8-8	10-10	20, 17, 17, ?	...	...
325	♀	203	135	8-8	9-9	20, 17, 16, 13	1127	354
234*	♂	202	88+	8-8	8-9	20, 17, 17, 13	1084	265+

* Tip of tail missing.

† Posterior part of body wanting.

Salvadora grahamiae hexalepis (Cope)

Salvadora grahamiae Baird and Girard, Cat. N. Amer. Rept., pt. 1, 1853, p. 104 (Sonora, Mex.; Col. J. D. Graham, collector).

A specimen of *S. g. hexalepis* (No. 1163) was found dead under a rock at a point on the highway fifty miles south of Nogales. It consisted of a skeleton with dried skin sufficient to identify the species.

Phyllorhynchus decurtatus decurtatus (Cope)

Phyllorhynchus decurtatus decurtatus Linsdale, (part) Copeia, No. 4, 1933, p. 222; Klauber, Bull. Zoöl. Soc. San Diego, No. 12, Sept. 12, 1935, pp. 5-9.

Three specimens of *Phyllorhynchus* were collected in southern Sonora. No. 457 ♀ was found at La Posa running rather rapidly near some shrubs, about twenty-five meters from the sea, the night of July 10. No. 483 ♂ was discovered at La Posa by following a snake's trail in loose dry sand on the beach, the night of July 12. A third specimen, No. 1100 ♂, was found on a barren flat near the sea about four miles north of Guaymas, the night of August 4.

Data and Measurements of *Phyllorhynchus decurtatus decurtatus* (Cope)

No.	*Sex*	*Length*	*Tail*	*Ventrals*	*Subcaudals*	*Scale rows*	*Upper labials*	*Lower labials*
457	♀	284	27	165	25	24-19-19	7-6	9-9
483	♂	273	49	151	34	23-19-17	6-7	9-9
1100	♂	296	44	152	31	20-19-16	6-6	9-9

No.	*Oculars*	*Loreals*	*Dorsal spots body*	*Dorsal spots tail*
457	8-8	3-3	42	7
483	8-8	2-2	25	5
1100	7-6	1-1	28	5

The first specimen (No. 457) is a female, and the scales are smooth save for a very faint suggestion of keels along the posterior half of the body. No. 483 has the scales strongly keeled on the nine dorsal scale rows, the keels beginning about one centimeter back of the head; No. 1100 has the scales of the nine median dorsal rows even more strongly keeled than the preceding.

These three specimens were taken in the same general locality, all less than five miles apart, and two of these, a male and a female, within a few yards of each other. These are, apparently, specimens of the same species, but there are strong differences in markings, perhaps due to sexual dimorphism.

Linsdale believes a specimen taken at Caborca, Sonora, having faint keels, should be referred to *browni*, but as a subspecies of *decurtatus*.

The specimens listed here have been studied by L. M. Klauber in his recent review of the genus *Phyllorhynchus* (*loc. cit.*). I have followed him in the disposition of the specimens.

They present the following characteristics: Snout with a curved band rising on fifth and sixth labials, passing through eye and across the anterior part of the frontal to the opposite side of head; a second band crosses just behind the parietals and the ends run back varying distances on the side of the neck, on either side of the large nuchal spot; the area between these two bands on the head is variously spotted, or the two bands may be joined by confluent spots. A light spot on the frontal is enclosed wholly or partially by dark color.

The first two dorsal spots are confluent in the males but divided in the female. The first few dorsal spots are deep, black-brown. The dorsal spots on the males have darker borders; in the female, this darker border is scarcely evident. In the males the dorsal spots total 30, and 33; in the female, 50.

There is an irregular series of lateral spots in the males; in the female these are more numerous and less distinctly outlined.

Pituophis sayi affinis (Hallowell)

Pituophis sayi affinis Stull, Occ. Papers Mus. Zoöl. Univ. Mich., No. 250, Oct. 12, 1932, p. 4.

A single specimen (No. 80) was collected on the morning of June 20 in the shade of a small tree in the arid region near Noria. It remained motionless until I approached and grasped it.

It presents the following characters: Four prefrontals; rostral entering between the internasals nearly half their length; loreal elongate; one pre-, three postoculars; 8-8 upper labials, the fourth entering orbit; 12-13 lower labials, six touching the first chinshield; scale rows, 29, 31, 33, 33, 23; ventrals, 235; anal, single; subcaudals, 57; blotches on body, 46; blotches on tail, 12; anterior two thirds of body has the lateral spots more or less confluent with the dorsal blotches and the yellow cream interspaces form small spots occupying 9 to 12 scales on the sides; the light scales have a brown keel.

The head is yellowish posteriorly, with small black flecks; a curved band slightly anterior to eyes; a diagonal line from postoculars to the last labial; labial sutures brown; a series of brown spots on the ventrals and subcaudals, somewhat confluent under tail.

Ficimia desertorum Taylor

(Plate XLIII, fig. 1.)

Ficimia desertorum Taylor, Proc. Biol. Soc. Wash., Vol. 49, May 1, 1936, pp. 51-52.

The type specimen was discovered near a spring, about one and a half miles northeast of La Posa, ten miles northwest of Guaymas. It had been injured, and ants had destroyed a few scales. This spring is a few hundred yards farther east than the opening of the canyon in which was a spring mentioned elsewhere.

Hypsiglena orchrorhynchus Cope

Hypsiglena ochrorhyncha Cragin, Bull. Washburn Lab. Nat. Hist., Sept., 1884, No. 1, pp. 6-8 (Guaymas); Allen, Occ. Papers Mus. Zoöl. Univ. of Michigan, No. 259, Apr. 3, 1933, p. 12 (Hermosillo).

The Cragin (1884) record of one specimen from Guaymas is the earliest known for Sonora. It was collected by Prof. J. T. Lovewell. Allen obtained a specimen at Hermosillo.

I collected three specimens. No. 120 was taken in the boulder field five miles southwest of Hermosillo. It was found at dusk under the edge of my car step, June 22. No. 266 was caught in camp at La Posa, ten miles northwest of Guaymas, June 30; and No. 281 was discovered under a rock, under an overhanging cliff, near San Carlos Bay, two miles west of La Posa, July 1.

The ground color of the three specimens varies from an ash-gray in No. 281 to a brownish-gray in No. 120, and to a lavender-gray in No. 266. The characteristic neck- and head-marking consists of a dark-brown spot which fails to reach the ventrals by three scale rows. From the lower anterior edges, branches, on each side, run across the temples through the eyes to the rostral, but fail to meet anteriorly, widest on the temples; dorsally the blotch has a median forward projection which reaches the parietals. The whole blotch is outlined by an indistinct cream line which becomes a very distinct white on the sides. It follows the upper edges of the anterior labials, passes diagonally across the posterior labials and the angle of the mouth and may be continued back along the neck a short distance. In two specimens the neck band is broken unequally in twain by a cream-white line running longitudinally. The dorsal markings on the body are typical in all.

The three specimens agree in the following characters: The nostril is between two nasals; a loreal present; two preoculars, the upper very large, the lower very small and below the anterior part of the eye. Two postoculars, the upper largest. Temporals. 1+2;

eight upper, nine lower labials (No. 281 has seven upper labials on right side, due to a fusion of the second and third); five labials touching the first chinshields; anal divided.

Measurements (in mm.) and scale counts of *Hypsiglena ochrorhynchus* (Cope)

No.	*Sex*	*Total length*	*Tail*	*Ventrals*	*Subcaudals*
120	♂	325	74	178	60
266	♀	339	69	177	54
281	♂	226	73	181	63

Thamnophis eques (Reuss)

Thamnophis eques Ruthven, Bull. U. S. Nat. Mus., No. 61, 1908, pp. 158-164.

Eight specimens were taken, all in the general neighborhood of La Posa, which appear to differ but little from highland specimens from Mexico and the United States.

Ruthven (*loc. cit.*) has suggested that the species is absent from the coastal plain. These specimens demonstrate its presence at sea level, at least in the region about Guaymas. Cragin's (1884) record of *Eutaenia cyrtopsis** from Guaymas has been referred to this species.

Trimorphodon lambda Cope

Trimorphodon lambda Cope, Proc. Amer. Phil. Soc., 1885, pp. 286-287 (type description; type locality, Guaymas, Sonora. Type, No. 13487, U. S. N. M. H. F. Emerich, collector); Cope, Ann. Rep. U. S. Nat. Mus., 1898 (1900), p. 1104.

The retention of Cope's Sonoran species of *Trimorphodon* seems warranted despite the rather striking resemblance of the color pattern to certain Mexican and American forms. As yet, no series of sufficient size is available to properly evaluate the various characters on which most of the species of this genus have been established.

Klauber (1928), in his review of *Trimorphodon* in Baja California, California, and Arizona, recognizes the Arizona specimens from the Huachuca Mountains region as belonging to the species *T. lyrophanes,* and makes no effort to place *lambda* in the synonymy of that form. I have no *lyrophanes* available for making a critical comparison.

I obtained three specimens (Nos. 265, 366, and 341) in the general vicinity of Guaymas. The first was captured near La Posa crawling on gravelly ground at sea level, near my tent about midnight. It stopped and remained quiet, allowing itself to be picked up without struggling, and without endeavoring to bite. No. 336 was found at night in similar terrain near the beach. A third was captured in a

* I have endeavored to find this specimen in the collection of Washburn College at Topeka, Kan., but it appears to be lost.

niche in a low rock cliff near the sea about ten o'clock in the morning. The specimen was tightly coiled and was picked up in this condition, the specimen remaining coiled when captured, making no attempt at resistance. The last mentioned has been skeletonized.

My specimens Nos. 265 and 336 present the following characters: sex, ♂, ♂; scale counts at various points on body, 28, 19, 22, 22, 22, 16, 16; 29, 19, 21, 22, 22, 17, 15; ventrals, 232, 222; subcaudals, 83, 87; anals, 2, 2; supralabials, 9-9, 9-9; infralabials, 12-13, 11-12; preoculars, 3-3, 3-3; postoculars 3-3, 3-3; temporals, 3, 3, 4, 5; 3, 3, 3, 4; loreals, 2-2, 2-2; total length, 721 mm., 788 mm.; tail, 132 mm., 155 mm.; head length to jaw angle, 20, 25; head width, 14, 15; spots on body, 29, 31; spots on tail, 17, 18; spots separated by scales, 3½-4, 3½-4; labials enter eye, 4-5, 4-5.

The diameter of eye equals the distance of eye to nostril, in the first, and very slightly less in the second; the frontal is longer than its distance from the end of the snout; the prefrontals are as long as wide; frontal longer than parietal width, shorter than parietal length; preocular is not in contact with frontal in either.

The type has 234 ventrals; anal divided; subcaudals, 83. It agrees in the remainder of the characters so far as stated save that there are three loreals. This condition is probably anomalous, and occurs occasionally in several other species.

The body markings of *lambda* consist of a series of saddlelike brownish blotches, with a whitish to a light gray transverse center, and bordered completely with the same color. The blotches are about four scale rows wide dorsally, narrowing to a single scale width laterally; they reach to the outer scale row. Between these blotches are other brownish-gray blotches which are about two scale rows wide dorsally, and five scale rows wide laterally; a more or less regular series of distinct, brownish spots on the outer edge of every second or third ventral, which may extend on the adjoining scales; rarely are these spots confluent with the dark dorsal blotches; ventrals with other dim brownish flecks. The head markings consist of a series of chevrons, the one across the snout brownish, followed by a narrow grayish band on the anterior part of the prefrontals; this is followed by a broader brown band which passes through eye diagonally and terminates on the upper part of the fifth and sixth labials; next to this appears an irregular grayish chevron, followed by another which is broad, irregular, brownish, much lighter laterally, showing two darker spots on the supraoculars. A white dot present on the posterior part of the frontal which is

confluent with the gray chevron which follows. This chevron forms the light anterior border for the first dorsal blotch, which is grayish-brown with a circular gray medium dorsal spot.

In the smaller specimen (No. 265) the markings between the blotches themselves are a little darker and the ventral flecks fewer than in the larger (described) specimen.

Tantilla hobartsmithi Taylor

Tantilla hobartsmithi Taylor, Trans. Kan. Acad. Sci. XXXIX, 1936, pp. 340-342, fig. 2.

Only the type was captured. This was taken at a point about two miles north of La Posa, back of the first low range on the bank of a dry stream bed at night. The specimen was running rapidly over gravelly soil under brush.

Crotalus cinereous Le Conte

Caudisona atrox sonoraensis, Kennicott, Proc. Acad. Nat. Sci. Phila., Aug., 1861, pp. 206-207.

This species was especially abundant in the southern part of the province. Eleven specimens were captured in the neighborhood of Miramar and La Posa, and several which were seen escaped. Several decapitated and decaudated specimens were seen, and a few specimens killed by autos were observed. The specimens in this region appear to be distinctly dwarfed as compared with the Texas specimens, and may warrant a revival of Kennicott's "*sonoraensis*."

Most of the specimens were captured on the gravelly flats near the sea, and in the sand piled up by the waves where the sandy beach and shrub meet. This area harbors many rodents, insuring a constant food supply.

One specimen was captured at Hermosillo. These specimens have been studied by Mr. Howard K. Gloyd.

Crotalus molossus molossus Baird and Girard

Crotalus molossus Allen (Gloyd), Occ. Papers Mus. Zoöl. Univ. of Mich., No. 259, April 3, 1933, pp. 13-14.

Four specimens of this form were collected, one five miles southwest of Hermosillo, crawling at night among the boulders, and three near La Posa, ten miles northwest of Guaymas. One, an old, emaciated male, was taken late at night in a small cave in the mountains near La Posa. One was captured at 3:00 o'clock in the afternoon crawling along the west side of a cliff in a narrow shadow. The colors were very bright, as if it had recently shed. It did not sound

its rattles on my approach or even while being captured. A fourth was found early in the morning in another small cave near La Posa. This specimen was skeletonized.

Data on these specimens have been taken by Mr. Howard K. Gloyd.

Crotalus tigris Kennicott

Crotalus tigris Allen (Gloyd), Occ. Papers Mus. Zoöl. U. of Mich., No. 259, April 3, 1933, pp. 12-13.

One specimen (No. 154) collected five miles southwest of Hermosillo was found coiled at night near an isolated rock mass. As my light approached, the snake neither moved or rattled; in fact the rattles were not sounded until it was being carried in the sack.

A second specimen (No. 224) was found coiled at night in low mountains near La Posa.

These specimens have been studied by Mr. Howard K. Gloyd, who, presumably, will publish the scale data taken.

TURTLES

Kinosternon sonoriense Le Conte

Kinosternum sonoriense Le Conte, Proc. Acad. Nat. Sci. Phila., 1854, p. 184 (type description; type locality, Tucson, Ariz.).

Two specimens were taken, one consisting of a carapace and bones of a dead specimen found in a dry arroyo. Another specimen was captured in the highway, fifteen miles north of Hermosillo. (No. 1168.)

Gopherus agassizii (Cooper)

Xerobates agassizii Cooper, Proc. California Acad. Sci., II, 1863, p. 120 (type description; type locality, mountains near Fort Mojave, Calif.).

This species was rather common in Sonora. Four specimens were collected and several seen were not collected. Their usual hide-outs during the day were small excavations around the base of cliffs, and in the soft earth in old cliff caves.

I do not have material available from the type locality, so the association of these specimens with *agassizii* is done without due critical examination.

The specimens are: No. 115, 40 miles south of Noria, June 22, in a large rock crevice filled partly with refuse from a colony of leaf-cutting ants; Nos. 237 and 237a, at base of cliff near La Posa, June 29; No. 1167, twenty miles north of Noria, August 11, in road.

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Lists four amphibians, eleven lizards, six snakes and one turtle. One lizard, *Dipso-saurus dorsalis sonoriensis,* is described as new. *Pternohyla fodiens* and *Gastrophryne texensis* are reported for the first time from Sonora (Noria).

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There is doubt that the type localities of the new forms described actually are in territory now included in Sonora.

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The following list from this work, which purports to be complete to date, 1922, gives the known species of the state of Sonora: *Coleonyx variegatus* (Baird) (San Miguel de Horcasitas; Tepoca Bay); *Dipsosaurus dorsalis dorsalis* (Baird and Girard) (northwestern Sonora); *Sauromalus townsendi* Dickerson (Tiburón Is.; Guaymas); *Crotaphytus collaris baileyi* (Stejneger) (Hermosillo; Sierra Tule; Tiburón Is.); *Crotaphytus wislizenii* Baird and Girard (northwestern Sonora; Tiburón Is.); *Uma notata* Baird (Tepoca Bay); *Callisaurus inusitatus* Dickerson (Tiburón Is.; Tepoca Bay; San Pedro Bay; Guaymas; San Miguel de Horcasitas); *Holbrookia maculata approximans* (Baird) (Duros Millos; headwaters of the San Pedro river); *Holbrookia elegans* Bocourt (Guaymas); *Holbrookia texana* (?Sonora); *Uta ornata lateralis* (Boulenger) (Guaymas; Tiburón Is.); *Uta ornata symmetrica* (Baird) (two miles south of Nogales; 32 miles south Nogales; Duros Millos); *Uta stansburiana elegans* (Yarrow) (Tepoca Bay; San Pedro Bay; Tiburón; Patos and Pelican Islands); *Sceloporus scalaris* Wiegmann (no localities given); *Sceloporus consobrinus* Baird and Girard ("Sonora," Cope); *Sceloporus jarrovii* Cope (Pinetos Camp, 32 miles south of Nogales); *Sceloporus torquatus poinsettii* (Baird and Girard) ("Sonora"); *Sceloporus magister* Hallowell (Tiburón Is.); *Sceloporus clarkii* Baird and Girard (32 miles south of Nogales; San Pedro Bay; Tiburón and San Pedro Nolasco Islands); *Phrynosoma douglassii hernandesi* Girard (northern Sonora); *Phrynosoma ditmarsi* Stejneger (Sonora, a short distance south of the border of Arizona); *Phrynosoma solare* Gray (Hermosillo); *Phrynosoma goodei* Stejneger (Gulf Coast of Sonora); *Phrynosoma m'callii* (Hallowell) (Sonora); *Phrynosoma modestum* Girard (Sierra de la Narizo); *Heloderma suspectum* Cope (Guadalupe Cañon; San Bernardino; Niggerhead Mountain; San Pedro Bay); *Gerrhonotus kingii* (Gray) ("Sonora," Cope); *Cnemidophorus gularis* Baird and Girard (2 miles south of Nogales; Pinetos Camp 32 miles south of Nogales; San Pedro Bay; Guaymas); *Cnemidophorus melanostethus* Cope (Hermosillo; Tepoca Bay; San Pedro Bay; Guaymas; Tiburón); *Siagonodon humilis* (Baird and Girard) (San Miguel de Horcasitas); *Constrictor imperator* (no locality given); *Diadophis regalis* Baird and Girard (San Magdalena); *Heterodon nasicus* Baird and Girard ("Sonora"); *Coluber flagellum piceus* (Cope) (Hermosillo; Tiburón Is.); *Coluber semilineatus* (Cope) (San Pedro Bay); *Salvadora hexalepis* (Cope) (Guaymas; Sierra Blanca; Tiburón Is.); *Lampropeltis getulus yumensis* Blanchard (Sonora); *Hypsiglena ochrorhynchus ochrorhynchus* Cope (Guaymas); *Thamnophis eques* (Reuss) (Guaymas); *Thamnophis marcianus* (Baird and Girard) (Sonora); *Sonora semiannulata* (Baird and Girard) (Sonora); *Chilomeniscus cinctus* Cope (Guaymas, type locality); *Oxybelis acuminatus* (Wied) (no definite locality given); *Trimorphodon lambda* Cope (Guaymas); *Micrurus euryxanthus* Kennicott (Sonora); *Hydrus platurus* (Linnaeus) (Pacific coast, Guaymas); *Kinosternon sonoriense* (Le Conte) (San Pedro river; Cajón Bonita creek; San Bernardino river; Guadalupe Cañon; *Gopherus agassizii* (Cooper) (Tiburón Is.; San Pedro Bay); *Dermochelys schlegelii* (Garman) (seen at Guaymas).

PLATE XLIII

FIG. 1. *Ficimia desertorum* Taylor. Photograph of type.
FIG. 2. *Cnemidophorus burti* sp. nov. Photograph of type.

PLATE XLIII